

Metabright™ Robolights provide high intensity direct illumination comparable to Metabright™ Front Lights and are designed for IP68 rated environments. Robolights feature rugged industrial housings for industrial work envelopes. The Robolight is a cost effective and “integrator ready” machine vision illuminator with an integrated constant current driver.



### FEATURES

- Rugged housings for industrial work envelopes
  - IP68 Black Anodized Aluminum
  - IP68 Stainless Steel
- Tapped holes for mounting
- Lens options for Wide, Narrow, and Line (Exolight)
- Polarization option
- In-line strobe, 24VDC, ULC-2, etc. versions available
- Stainless Steel version meets Food and Drug Administration (FDA) requirements
- IP69K version available

### APPLICATIONS

- Large work envelopes
- Packaging, food and pharmaceuticals
- Wet/harsh environments
- Wash-down applications
- Liquid filling

### WAVELENGTH (nanometers)

W	White 6000K
R	Red 630nm
G	Green 530nm
B	Blue 470nm
IR	Infrared 850nm
UVL	Ultraviolet Long 395nm
UVS	Ultraviolet Short 365nm
RGB	630/530/470nm
RGBIR	630/530/470/850nm

### SPECIFICATIONS

Cable (Standard):	10 ft. (3 m) with flying leads
IP Rating:	IP68
Operating Temperature:	-30°C to 60°C
Illuminance:	Varies by model
Intensity Control:	0 – 10V intensity control built in. Compatible with optional DDC-3 and ILD-35-24-L
Lifetime (Expected):	75,000 hours

Note: Multispectral & custom wavelengths available

### ROBOLIGHT SPECIFICATIONS, continued

SINGLE COLOR ROBOLIGHTS							Typical Current (Amps) @24VDC						
All models: Overall W=2.5", Active area W=1.5"													
MODEL	Overall Length inches (cm)	Active Area Length Inches (cm)	Weight ±10% lbs/Kg	Weight ±10% lbs/Kg	Cable	WHT	RED	GRN	BLUE	IR	UVL	UVS	
MB-RBL205	6.73 (17.08)	5.73 (14.54)	1.2 / 0.54	2.9 / 1.32	20 AWG 4-Wire 10ft	0.3	0.2	0.3	0.3	0.3	0.2	0.2	
MB-RBL285	8.00 (20.32)	7.00 (17.78)	1.4 / 0.63	3.0 / 1.36		0.3	0.2	0.3	0.3	0.3	0.2	0.2	
MB-RBL305	12.50 (31.75)	11.50 (29.21)	2.2 / 1.00	5.1 / 2.31		0.6	0.4	0.6	0.6	0.5	0.5	0.5	
MB-RBL365	16.00 (40.64)	15.00 (38.10)	2.8 / 1.27	6.0 / 2.72		0.8	0.5	0.8	0.7	0.8	0.7	0.7	
MB-RBL385	18.00 (45.72)	17.00 (43.18)	3.2 / 1.45	6.8 / 3.08		0.8	0.6	0.8	0.7	0.8	0.7	0.7	
MB-RBL405	24.00 (60.96)	23.00 (58.42)	4.2 / 1.90	9.0 / 4.08		0.9	0.7	0.9	0.8	0.8	0.8	0.8	
MB-RBL505	30.00 (76.20)	29.00 (73.66)	5.3 / 2.40	11.2 / 5.08	18 AWG 4-Wire 10ft	1.3	1.0	1.4	1.3	1.1	1.2	1.2	
MB-RBL605	36.00 (91.44)	35.00 (88.90)	6.5 / 2.95	13.5 / 6.12		1.5	1.2	1.6	1.5	1.5	1.4	1.4	
MB-RBL705	42.00 (106.68)	41.00 (104.14)	7.6 / 3.45	15.8 / 7.17		1.7	1.4	1.8	1.7	1.7	1.6	1.6	
MB-RBL805	48.00 (121.92)	47.00 (119.80)	8.7 / 3.95	18.0 / 8.16		2.0	1.8	2.1	2.1	2.0	2.0	2.0	
MB-RBL905	54.00 (137.16)	53.00 (134.62)	10.0 / 4.54	20.3 / 9.21		2.2	1.9	2.2	2.2	2.2	2.1	2.1	
MB-RBL1005	60.00 (152.40)	59.00 (149.96)	11.1 / 5.03	22.5 / 9.98		2.5	2.1	2.7	2.6	2.5	2.3	2.3	
MB-RBL1105	66.00 (167.64)	65.00 (165.10)	12.3 / 5.58	24.8 / 11.25	2.8	2.4	2.8	2.8	2.7	2.6	2.6		
MB-RBL1205	72.00 (182.88)	71.00 (180.34)	13.5 / 6.12	27.0 / 12.25	3.0	2.7	3.2	3.1	2.9	2.8	2.8		
			Aluminum	Stainless Steel									

### SINGLE COLOR ROBOLIGHT WIRING OPTIONS:

WIRING DIAGRAM (4 conductor)		WIRING DIAGRAM (6 conductor)		M12 Speedcon (#1405879, 5 position male)	
Wire Color	Function	Wire Color	Function	Pin #	Function
RED	+24VDC	RED, ORANGE	+24VDC	1	+24VDC
GREEN	SIGNAL GROUND	GREEN	SIGNAL GROUND	2	0-10VDC Intensity Control
BLACK	GROUND (24V RTN)	BLACK, BLUE	GROUND (24V RTN)	3	GROUND (24V RTN)
WHITE	0-10VDC Intensity Control	WHITE	0-10VDC Intensity Control	4	SIGNAL GROUND
				5	No Connection
<p>When not using the Intensity Control, connect the 0-10V control line to +24VDC and connect the Signal Ground to Ground (24V RTN)</p>				<p>The M12 connector option is not recommended for lights rated in excess of 4 amps max current. Cable length = 19" with M12 connector</p>	

### ROBOLIGHT SPECIFICATIONS, continued

SINGLE COLOR ROBOLIGHTS with ULC-2 Controller												
All models: Overall W=2.5", Active area W=1.5"			Weight ±10% lbs/Kg	Weight ±10% lbs/Kg	Cable	Input Current @24VDC / Strobe Current @250µS						
MODEL	Overall Length inches (cm)	Active Area Length Inches (cm)				WHT	RED	GRN	BLUE	IR	UVL	UVS
MB-RBL205	6.73 (17.08)	5.73 (14.54)	1.2 / 0.54	2.9 / 1.32	18 AWG 4-Wire 10ft	0.6 / 2.5						
MB-RBL285	8.00 (20.32)	7.00 (17.78)	1.4 / 0.63	3.0 / 1.36		0.6 / 2.5						
MB-RBL305	12.50 (31.75)	11.50 (29.21)	2.2 / 1.00	5.1 / 2.31		0.9 / 10						
MB-RBL365	16.00 (40.64)	15.00 (38.10)	2.8 / 1.27	6.0 / 2.72		1.0 / 10						
MB-RBL385	18.00 (45.72)	17.00 (43.18)	3.2 / 1.45	6.8 / 3.08		1.1 / 10						
MB-RBL405	24.00 (60.96)	23.00 (58.42)	4.2 / 1.90	9.0 / 4.08		1.2 / 10						
MB-RBL505	30.00 (76.20)	29.00 (73.66)	5.3 / 2.40	11.2 / 5.08		1.6 / 13						
MB-RBL605	36.00 (91.44)	35.00 (88.90)	6.5 / 2.95	13.5 / 6.12		1.8 / 18						
MB-RBL705	42.00 (106.68)	41.00 (104.14)	7.6 / 3.45	15.8 / 7.17		2.0 / 18						
MB-RBL805	48.00 (121.92)	47.00 (119.80)	8.7 / 3.95	18.0 / 8.16		2.3 / 20						
MB-RBL905	54.00 (137.16)	53.00 (134.62)	10.0 / 4.54	20.3 / 9.21		2.5 / 25						
MB-RBL1005	60.00 (152.40)	59.00 (149.96)	11.1 / 5.03	22.5 / 9.98		2.8 / 27						
MB-RBL1105	66.00 (167.64)	65.00 (165.10)	12.3 / 5.58	24.8 / 11.25		3.1 / 27						
MB-RBL1205	72.00 (182.88)	71.00 (180.34)	13.5 / 6.12	27.0 / 12.25		3.5 / 30						
			Aluminum	Stainless Steel								

SINGLE COLOR LIGHT with ULC-2 (4 conductor)	
WIRE COLOR	FUNCTION
RED, WHITE (+)	LED INPUT
BLACK, GREEN (-)	
Terminated within a 2 position BCP-508-2 connector to interface with the ULC-2 "LED Output"	

### ROBOLIGHT SPECIFICATIONS, continued

RGB ROBOLIGHTS				
MODEL	Cable QTY	Cable Length	Cable Desc.	Input Current (Amps)
MB-RBL205	1	10ft	18 AWG 6-Wire	0.4
MB-RBL285				0.5
MB-RBL305				0.8
MB-RBL365				1.0
MB-RBL385				1.1
MB-RBL405				1.2
MB-RBL505				1.5
MB-RBL605				1.7
MB-RBL705				1.9
MB-RBL805				2.2
MB-RBL905				2.4
MB-RBL1005				2.7
MB-RBL1105				3.0
MB-RBL1205				3.2

RGBIR ROBOLIGHTS				
MODEL	Cable QTY	Cable Length	Cable Desc.	Input Current (Amps)
MB-RBL205	1	10ft	20 AWG 10-Wire	0.4
MB-RBL285				0.5
MB-RBL305				0.8
MB-RBL365				1.0
MB-RBL385				1.1
MB-RBL405				1.2
MB-RBL505				1.5
MB-RBL605				1.7
MB-RBL705				2
MB-RBL805				2.2
MB-RBL905				2.4
MB-RBL1005				2.7
MB-RBL1105				2.9
MB-RBL1205				3.2

RGB (6 Conductor)	
WIRE COLOR	FUNCTION
ORANGE	+24VDC
BLACK	GND (24V RTN)
WHITE	SIG GND
RED	0-10V RED Intensity Control
GREEN	0-10V GREEN Intensity Control
BLUE	0-10V BLUE Intensity Control
<p>When not using the Intensity Control, connect the 0-10V control line(s) to +24VDC and connect SIG GND to GND (24V RTN)</p>	

RGBIR (10 Conductor)	
WIRE COLOR	FUNCTION
WHITE	+24VDC
WHT/BLK	
BLACK	GND (24V RTN)
RED/BLK	SIGNAL GND
GREEN/BLK	
ORG/BLK	
RED	0-10V RED Intensity Control
GREEN	0-10V GREEN Intensity Control
BLUE	0-10V BLUE Intensity Control
ORANGE	0-10V INFRARED Intensity Control
<p>When not using the Intensity Control, connect the 0-10V control line(s) to +24VDC and connect SIG GND to GND (24V RTN)</p>	

### ROBOLIGHT SPECIFICATIONS, continued

RGB ROBOLIGHTS with ULC-2 Controller				
MODEL	Cable QTY	Cable Length	Cable Desc.	Input Current / Strobe Current
MB-RBL205	1	10ft	18 AWG 6-Wire	0.6 / 2.5
MB-RBL285				0.6 / 2.5
MB-RBL305				1.0 / 10
MB-RBL365				1.0 / 10
MB-RBL385				1.2 / 10
MB-RBL405				1.2 / 10
MB-RBL505				1.6 / 13
MB-RBL605				2.0 / 18
MB-RBL705				2.0 / 18
MB-RBL805				2.3 / 20
MB-RBL905				2.5 / 25
MB-RBL1005				2.8 / 27
MB-RBL1105				3.1 / 27
MB-RBL1205				3.5 / 30

RGBIR ROBOLIGHTS with ULC-2 Controller				
MODEL	Cable QTY	Cable Length	Cable Desc.	Input Current / Strobe Current
MB-RBL205	1	10ft	20 AWG 10-Wire	0.6 / 2.5
MB-RBL285				0.6 / 2.5
MB-RBL305				1.0 / 10
MB-RBL365				1.0 / 10
MB-RBL385				1.2 / 10
MB-RBL405				1.2 / 10
MB-RBL505				1.6 / 13
MB-RBL605				2.0 / 18
MB-RBL705				2.0 / 18
MB-RBL805				2.3 / 20
MB-RBL905				2.5 / 25
MB-RBL1005				2.8 / 27
MB-RBL1105				3.1 / 27
MB-RBL1205				3.5 / 30

RGB with ULC-2 (6 Conductor)	
WIRE COLOR	FUNCTION
RED (+)	LED INPUT
BLACK (-)	RED
GREEN (+)	LED INPUT
WHITE (-)	GREEN
BLUE (+)	LED INPUT
ORANGE (-)	BLUE
Terminated within a 2 position BCP-508-2 connector to interface with the ULC-2, "LED Output"	

RGBIR with ULC-2 (10 Conductor)	
WIRE COLOR	FUNCTION
RED (+)	LED INPUT
RED/BLK (-)	RED
GREEN (+)	LED INPUT
GRN/BLK(-)	GREEN
BLUE (+)	LED INPUT
BLACK (-)	BLUE
ORANGE (+)	LED INPUT
ORG/BLK (-)	IR
WHITE (+)	NO
WHT/BLK (-)	CONNECTION
Terminated within a 2 position BCP-508-2 connector to interface with the ULC-2, "LED Output"	

MODEL NUMBER KEY												
LED TYPE	-	MODEL	LENGTH	-	COLOR/WAVELENGTH	-	OPTION 1	-	OPTION 2	-	DIFFUSER	
MB	-	RBL	XXXX	-	XXXXX	-	XXX	-	XXX-XXX	-	X	
<b>MB</b> -MetaBright	-	<b>RBL</b> - Robolight	<b>205</b> 6.7"	-	<b>W</b> (White 6000K)	-	<b>24</b> (+24VDC) (standard)	-	(Leave Blank for a 10ft cable with flying leads)	-	<b>N</b> - Narrow, 8° <b>L</b> - Exolight Diffuser <b>W</b> - Wide, 34°	
			<b>285</b> 8"		<b>R</b> (Red 630nm)							
			<b>305</b> 12.5"		<b>G</b> (Green 530nm)							
			<b>365</b> 16"		<b>B</b> (Blue 470nm)							
			<b>385</b> 18"		<b>IR</b> (Infrared 850nm)							
			<b>405</b> 24"		<b>UVL</b> (Ultraviolet Long 395nm)		<b>U</b> (ULC-2 interface)					
			<b>505</b> 30"		<b>UVS</b> (Ultraviolet Short 365nm)		<b>KEY</b> (Keyance Controller)					<b>P</b> (Polarizer, available for all configurations)
			<b>605</b> 36"		<b>RGB</b> (Red-Green-Blue)		<b>ILD</b> (In Line Dimmer)					
			<b>705</b> 42"		<b>RGBIR</b> (Red-Green-Blue + IR)		<b>ILS</b> (In Line Strobe)					
			<b>805</b> 48"									<b>SS</b> (Stainless Steel Housing)
			<b>905</b> 54"									<b>XXX</b> Customizable per order
			<b>1005</b> 59"									
<b>1105</b> 66"												
<b>1205</b> 72"												

\***TRG** (Internal Trigger feature)

The Trigger feature consists of two additional leads from the Robolight. One lead is for a user provided NPN controlled input and a second lead for a PNP controlled input.

The following chart describes the circuit operation:

Condition	NPN Input Lead	PNP Input Lead	Result
NPN mode	<.9VDC	N/A (float)	Enables Light
PNP mode	N/A (float)	>2.5VDC	Enables Light
No Inputs	No Connection	No Connection	Light is Disabled

**Note:** When the Light is Enabled it is controlled by the 0-10VDC Intensity Control. For maximum intensity, tie the 0-10VDC Intensity Control line to +24 VDC and connect the Signal Ground line to 24V RTN.

Sample Model Number: MB-RBL305-UVL-24-N

12.50 [317.50]  
11.50 LIGHTED AREA [292.10]  
1.50 LIGHTED AREA [38.10]  
2.50 [63.50]  
0.50 [12.70]  
0.50 [12.70]  
2.88 [73.03]  
0.49 [12.46]  
1.47 [37.38]  
1.33 [33.68]

STAINLESS STEEL HARDWARE  
CLEAR ACRYLIC LENS  
POWER CABLE  
Gore High Flex  
20 AWG Shielded Power Cable; 4 conductor w/ flying leadwire ends; Ø.19" 10' Lg. W/ water resistant grommet.  
DURABLE BLACK ANODIZED FINISH  
SEE SHEET 3 FOR MOUNTING HOLES

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	7/15/2014	
B	ADDED END SCREWS - CHANGED FASTENERS TO METRIC - CENTERED POWER CABLE - REPLACED GASKET W/ NEW MATERIAL - REDUCED GASKET OVERALL SIZE TO ELIMINATE BULGING - ADDED LOCKTITE #250 THREAD LOCKER AND PRIMER #7649 TO BOM - SEE SHEET 2.	12/29/2014	

COOLING FINS ON BOTH SIDES  
WATER RESISTANT GASKET

SEE SHEET 2 FOR EXPLODED VIEW AND BOM.

Metaphase Technologies, Inc. 211 Sinclair Road, Suite 100, Bristol, PA. 19007 215-639-8699 Fax 215-639-0977

<b>QUANTITY:</b> Per order <b>MATERIAL:</b> Aluminum, plastic <b>FINISH:</b> Black Anodized <b>TREATMENT:</b> N/A	<b>TOLERANCE/FINISH</b> UNLESS OTHERWISE SPECIFIED INCHES/MILLIMETERS X .XX .XX .XXX [FRACTIONS] [-.75] [-.25] [-.10] [-.005] ANGLES±1°	THIS DOCUMENT IS THE PROPERTY OF METAPHASE TECHNOLOGIES, INC. WHOM MAY LOAN IT. SUBJECT TO RETURN UPON DEMAND. IT INCLUDES CONFIDENTIAL & PROPRIETARY INFORMATION WHICH MAY NOT BE DISCLOSED TO ANY THIRD PARTY, AND OR USED FOR ANY PURPOSE CONTRARY TO ITS INTENDED USE, WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF METAPHASE TECHNOLOGIES, INC.	<b>TITLE</b> Top Assy.; RoBo Light- 12" <b>USED ON</b> Per customer <b>DRAWING NUMBER</b> MB-RBL-305-1 SCALE 1:2 <b>REV</b> B SHEET 1 OF 3
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### COMPLIANCE



IEC  
62417